PULMONARY DISEASE WAIVERS

CONDITION: SARCOIDOSIS (ICD9 135)

Revised: April 2003

AEROMEDICAL CONCERNS: Sarcoidosis is a multi-organ system granulomatous disorder of unclear etiology. Sarcoidosis can affect any organ system. The most common is the lung followed by the skin, lymph nodes, eye, and liver. Cardiac sarcoidosis, with an incidence of between 5 and 20 percent, is associated with restrictive cardiomyopathy, ECG abnormalities such as ectopy and atrioventricular blocks, and sudden death from arrhythmias. Pulmonary involvement is progressive in 15-20 percent and results in a mix of restrictive and obstructive impairments. Uveitis can cause permanent visual damage. Neurologic involvement can produce a variety of symptoms to include fluctuating hearing loss, cranial nerve palsies, and seizures. Hypercalcemia can predispose the aircrew member to renal stones.

WAIVERS:

1. Initial Applicants:

    a. Class IA/1W: All forms of sarcoidosis are disqualifying. Initial flight applicants with either a history of or an active case of sarcoid will not be granted an exception to policy.

    b. Class 2, 3, 4: Waivers will not routinely be granted. Applicants with a history of sarcoidosis, who have been in remission for at least 1 year without the need for chronic medication, may be considered with a normal work-up (see below).

2. Rated Aviation Personnel (All Classes): Aircrew members with <u>asymptomatic</u> sarcoidosis may be considered for a waiver if in remission for at least 1 year and with a normal work-up (See below). Persistent, widespread pulmonary shadowing on x-ray with abnormal pulmonary function testing, and/or evidence of myocardial involvement (e.g., fixed thallium defect, significant arrhythmia, or wall motion abnormalities on ECHO) are all considered permanently disqualifying, no waiver recommended.

INFORMATION REQUIRED:

1. A complete AMS is required.
2. A definitive histological diagnosis is required with AMS submission. This may be from a transbronchial lung biopsy or from skin, conjunctiva or salivary gland biopsy.
3. Pulmonary medicine consultations are required.
4. Ophthalmology (including slit lamp examination) is required at the time of waiver request.
5. Recent PA and lateral chest x-ray (within 6 months) and a chest CT.
6. CBC, liver function tests, serum electrolytes, ACE, ESR, transaminase, serum calcium and phosphorous, and 24-hour urinary calcium.
7. Pulmonary function testing (PFT) with diffusion studies (e.g., DLCO), thallium AGXT, 24-hour Holter monitor.

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8. All cases with possible systemic or cardiac sarcoid should be referred to the USAAMA for further evaluation.

FOLLOW-UP: Annual internal medicine or pulmonary medicine consultation, PA, and lateral chest x-ray, ECG, CBC, LFT's, serum electrolytes, serum Calcium, and phosphorous and PFT's with diffusion studies are required. Further work-up is at the discretion of USAAMA. Reactivation of the disease will require a complete work-up as above and resubmission for waiver.

TREATMENT: Seventy-five percent of patients with asymptomatic sarcoidosis will spontaneously remit without treatment. Use of corticosteroids is not indicated in the absence of progressive end organ damage. The most common indication to begin corticosteroids is progression of disease in any organ system. Active treatment of sarcoidosis with any medication is NOT compatible with flying duties.

DISCUSSION: The incidence of sarcoidosis is highest in the 20 - 29 age group and is 3-4 times more common in African Americans. The majority of patients diagnosed with sarcoidosis present with abnormal radiographic findings (usually bilateral enlargement of hilar nodes) or nonspecific respiratory symptoms. Lung involvement occurs in over 90 percent of patients with sarcoidosis. The pulmonary classification of sarcoidosis is based on radiographic findings and can be divided into Stages 0-IV. Stage 0 indicates no visible radiographic involvement. Stage I is identified by the presence of bilateral hilar adenopathy. Stage II includes bilateral hilar adenopathy and interstitial infiltrates. Stage III is demonstrated by reticulonodular infiltrates without hilar adenopathy and Stage IV by advanced pulmonary fibrosis without adenopathy. Other presenting signs and symptoms associated with sarcoidosis include erythema nodosum (10 to 50 percent with females predominating), uveitis (15 to 25 percent) and enlargement of superficial nodes (30 percent of Europeans and up to 80 percent of African-Americans). Up to 30 percent of cases with acute sarcoidosis will have abnormal thallium scans suggesting myocardial involvement and liver biopsy will show sarcoid granulomas in 70 percent of cases without evidence of altered liver function. Nervous system involvement is demonstrable in 10 percent, but may be subclinical in a greater percentage. Osteolytic or osteosclerotic bone lesions are also present in 10 percent of cases. Healed myocardial granulomas may lead to arrhythmias, and patients in remission who have had myocardial involvement remain at risk for sudden death. MRI scan may eventually prove to be the method of choice for identifying cardiac sarcoid granulomas.

REFERENCE:

1. www.utdol.com (can be accessed through http://medlinet.amedd.army.mil with AKO username and password)